

Nathalie Barbeau

From: Nathalie Barbeau [nbarbeau@helitowcart.com]
Sent: August 9, 2006 3:44 PM
To: 'Mirko Zgela'
Cc: 'lbarbeau@sympatico.ca'
Subject: Helitowcart- Dessins modifiés

Bonjour Mirko,

Voici les deux dessins modifiés.

Je n'ai pas tenté de modification sur l'instruction car tu as le fichier word à jour. Dans le fichier provenant de toi reçu vendredi je n'avais que le fichier pdf.

Je crois donc qu'il serait préférable ce soit toi qui réalise les modifications sur l'instruction aux endroits appropriés...

Voici donc la synthèse des modifications:

- 1) Remplacement du boulon AN4-14A (longueur 1.5") pour le clip avant, par le boulon AN4-15A. (longueur 1.75").
 Donc on a dorénavant Qté 2 x AN4-14A (part no 261-0001-17-A), et Qté 2 x AN4-15A (part no: 261-0002-17-A).
- 2) Ajout d'un filler block en UHMW. Nouveau part no: 314-0012-01A. Qté 2. qui sera utilisé sous le clip avant seulement.

Ceci implique la modification de deux dessins:

- 1) La modification du no dessin de AMEC: VNR 083 rev 04, la vision d'ensemble de l'assemblage, (notre no pièce/dessin: 112-0001-00-B)
- 2) L'ajout du dessin de AMEC: VNR099 rev.01 pour le nouveau filler block. (notre no pièce/dessin: 314-0012-01-A)

Espérant le tout à ta convenance,
 Salutations chaleureuses,
 Nathalie

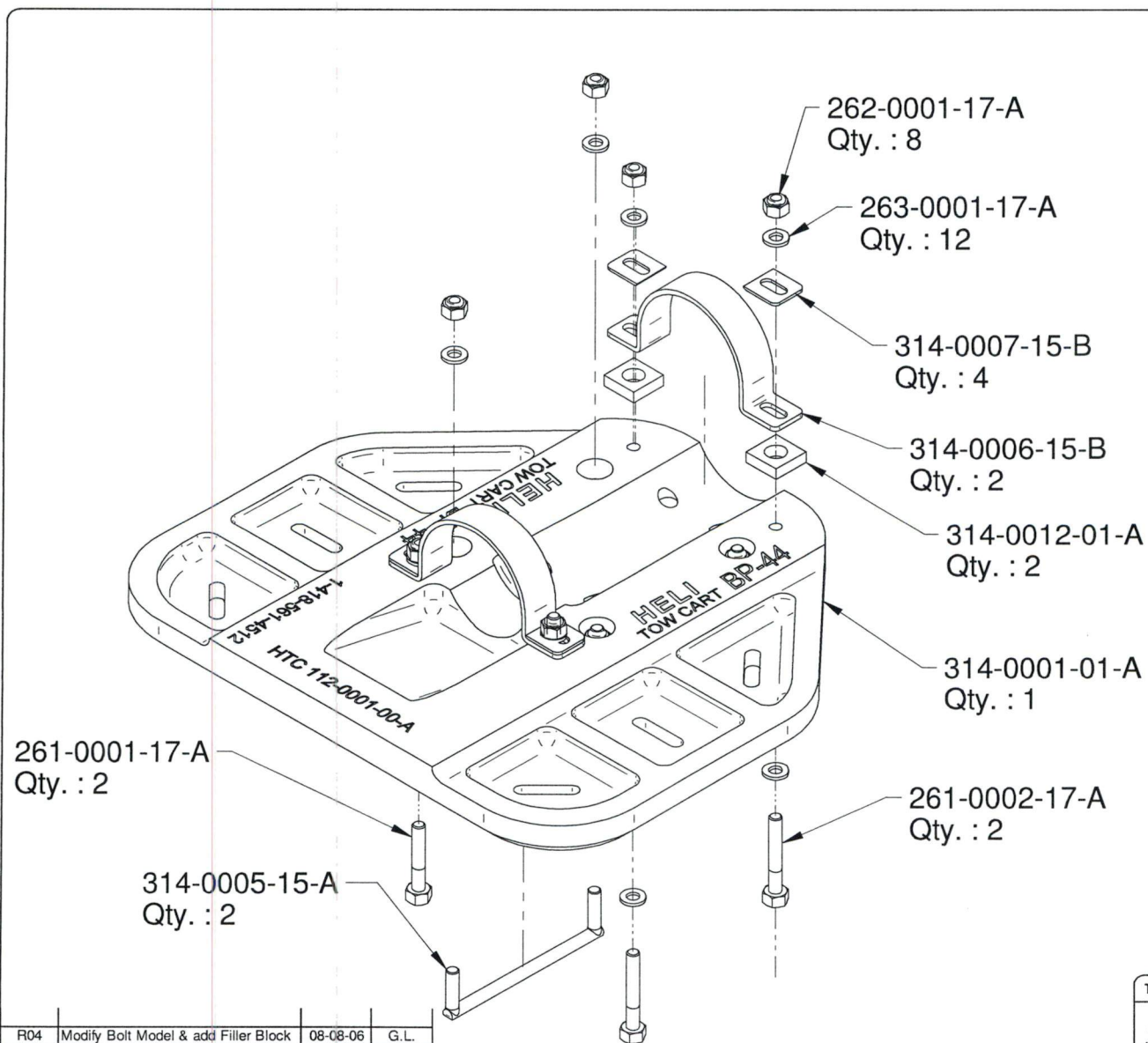
Helitowcart (by Vanair inc.)
 860 Marie-Victorin,
 St-Nicolas, Levis
 Quebec, Canada G7A 3S9
 t: +1.418.561.4512
 f: +1.418.836.2291
 info@helitowcart.com
 www.helitowcart.com

ECO #2

2 BOULONS AN4-15A (long. 1.75")

2 FILLER BLOCKS UHMW.

RAISON: TUBING TROP FORT À
 L'AVANT. CLIP ENTRE TROP JUSTE.
 ALLONGER BOLT + AJOUTER FILLER
 BLOCKS PERMET D'AMÉLIORER
 SANS AVOIR À CRÉER UN CLIP
 PLUS GROS.



N°	Qty	Description	Part #
1°	1	Bearpaw - Pad	314-0001-01-A
2°	2	Bearpaw - Iceblade assembly	314-0005-15-A
3°	2	Bearpaw - U Shaped clip	314-0006-15-B
4°	4	Bearpaw - Slotted clip support	314-0007-15-B
5°	8	Nut MS20-365-428	262-0001-17-A
6°	12	Washer AN960-416	263-0001-17-A
7°	2	Bolt AN4-14A	261-0001-17-A
8°	2	Bearpaw - Filler Block	314-0012-01-A
9°	2	Bolt AN4-15A	261-0002-17-A



NOTE : Iceblade assembly can be omitted from installation (Optional)

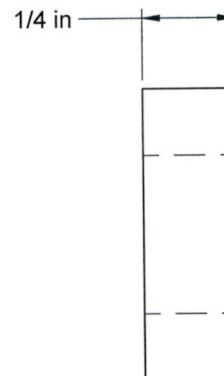
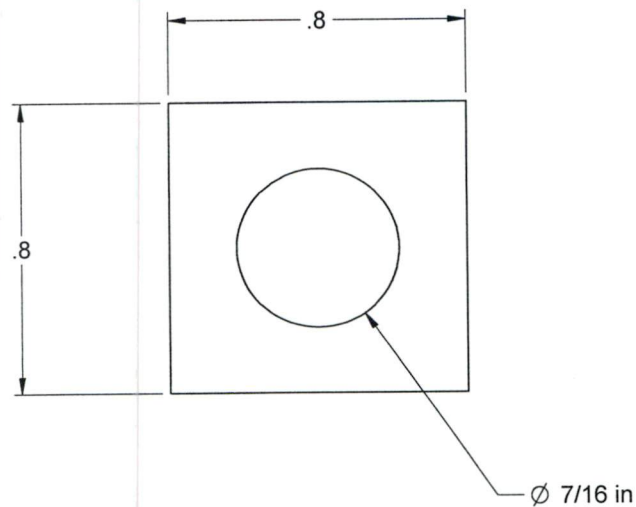
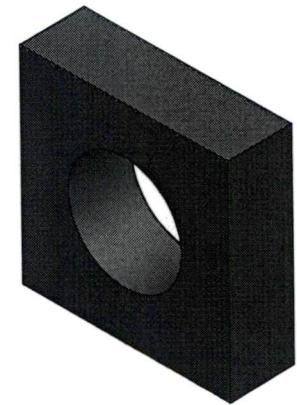
R04	Modify Bolt Model & add Filler Block	08-08-06	G.L.
R03	Issue for production	25-04-06	G.L.
Rev.	Description	Date	By

TOLERANCES		Titre / Title		Matériel / Material	
1/X ± 1/32"		Bearpaw Assembly			
X/XX ± 0.010"		Drawn by / Dessiné par	Date (yyyy-mm-d)	Format	Echelle / Scale
X/XXX ± 0.005"		G. Lapointe	2006-04-25	B	N/A
ANGLE ± 1°		Verifié par / Checked by	Date (yyyy-mm-d)	Numéro dessin / Drawing Number	Page #
				VNR083	1 de 1
		Approuvé par / Approved by	Date (yyyy-mm-d)	Numéro de pièce / Part Number	Rev #
				112-0001-00-B	R04

HELI
TOW CART

Vanair Inc.
860, Marie-Victorin
St-Nicolas, Lévis (Québec)
Canada, G7A 3S9
Tél. : (418) 561-4512
Fax : (418) 836-2291
www.heliotowcart.com

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R01	Initial issue	08-08-06	G.L.
Rev.	Description	Date	By

TOLERANCES
1/X ± 1/32"
X.XX ± 0.010"
X.XXX ± 0.005"
ANGLE ± 1°
PROJECTION:

		Vanair inc. 860, Marie-Victorin St-Nicolas, Lévis (Québec) Canada, G7A 3S9 Tél. : (418) 561-4512 Fax : (418) 836-2291 www.helitowcart.com		THIS DOCUMENT IS PROPERTY OF VANAIR INC. WRITTEN PERMISSION FROM VANAIR INC. SHALL BE OBTAINED PRIOR TO COPYING, USING OR MODIFYING.	
		Titre / Title: Filler Block		Matériel / Material: UHMW	
Dessiné par / Drawing by: G. Lapointe		Date: (yyyy-mm-dd) 2006-08-08	Format: A	Échelle / Scale: 1 : 1	Page #: 1 de 1
Vérifié par / Checked by:		Date: (yyyy-mm-dd)	Numéro dessin / Drawing Number: VNR099		Rev.#: R01
Approuvé par / Approved by:		Date: (yyyy-mm-dd)	Numéro de pièce / Part Number: 314-0012-01-A		Rev.#:

Reçu
S.S.06
17:05

8 août, 2006

Pages: 3

À: Guillaume Lapointe, AMEC, fx: 878-2536

De: Nathalie Barbeau, Helitowcart (Vanair inc.)

Objet: Modification de dessin et création d'un nouveau dessin pour le BEARPAW

Bonjour Guillaume,

Suite au test en vol effectué vendredi dernier avec les BearPaw, on a besoin de faire des modifications.

Trouve ci-joint la nature des modifs requises. En fait on a besoin d'ajouter un filler de UHMW de 0.25" d'épais sous le clip avant du bearpaw. Ce changement impose l'usage d'un boulon plus long. Svp effectuer modifications et me retourner les dessins.

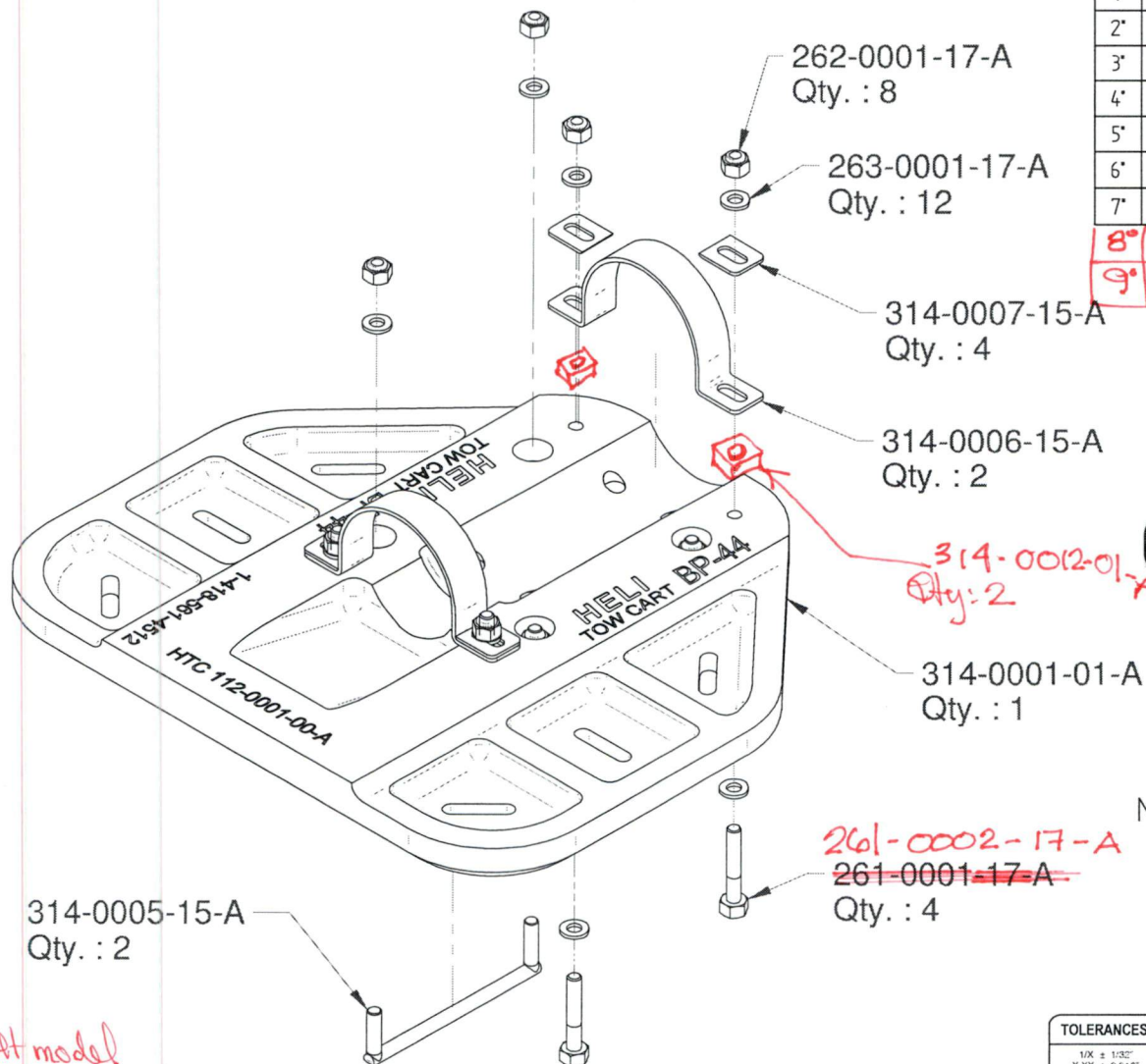
Merci beaucoup,



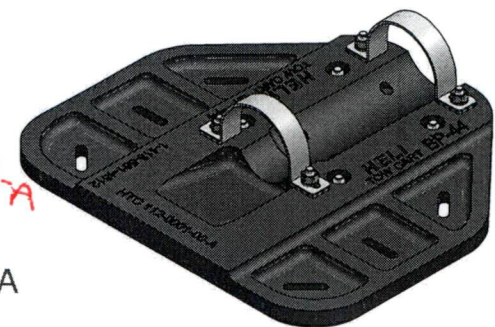
Nathalie Barbeau

P.J.:

- 1) Croquis pièce additionnelle "filler block".
- 2) Dessin d'ensemble de l'assemblage, annoté.



N°	Qty	Description	Part #
1°	1	Bearpaw - Pad	314-0001-01-A
2°	2	Bearpaw - Iceblade assembly	314-0005-15-A
3°	2	Bearpaw - U Shaped clip	314-0006-15-A
4°	4	Bearpaw - Slotted clip support	314-0007-15-A
5°	8	Nut MS20-365-428	262-0001-17-A
6°	12	Washer AN960-416	263-0001-17-A
7°	1 2	Bolt AN4-14A	261-0001-17-A
8°	2	Bolt AN4-15A	261-0002-17-A
9°	2	BearPaw - Filler block	314-0012-01-A



NOTE : Iceblade assembly can be omitted from installation (Optional)



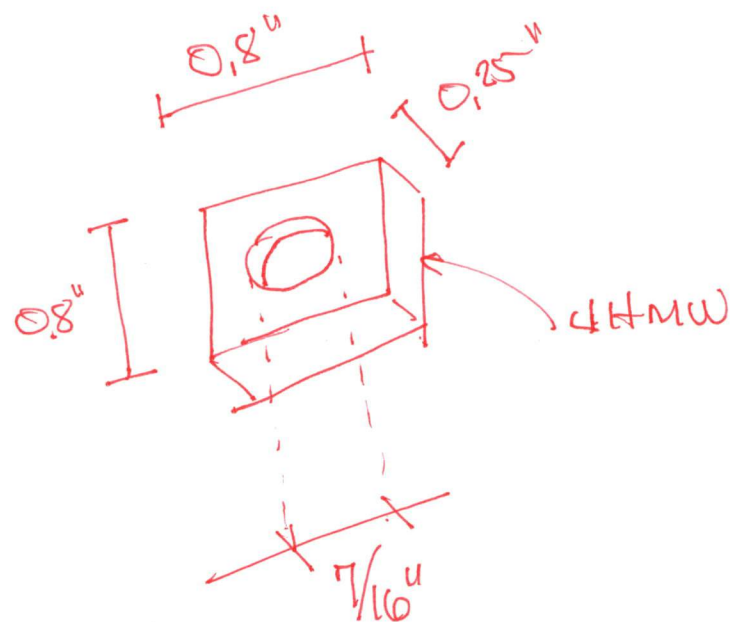
Vanair Inc.
860, Marie-Victorin
St-Nicolas, Lévis (Québec)
Canada, Q7A 3S9
Tél. : (418) 561-4512
Fax : (418) 836-2291
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TOLERANCES	Titre / Title			Matériel / Material		
1/XX ± 1/32"	Béarapaw Assembly					
XX/XX ± 0.010"	Dessiné par / Drawing by			Echelle / Scale		
XX/XX ± 0.005"	G. Lapointe			N/A		
ANGLE ± 1°	Vérifié par / Checked by			Page #		
				1 de 1		
	Approuvé par / Approved by			Rev #		
				Rev #		

R03	Issue for production	25-04-06	G.L.
Rev.	Description	Date	By

DVP : Dessin pour pièce additionnelle



Title: Filler block

Part no: 314-0012-01-A

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Pour Mirko
À modifier
par lui

À MODIFIER
PAR MIRKO
DIN ETAIL 9405

INTRODUCTION

Scope

This installation instruction describes the step-by-step approach to install and to perform maintenance of the Helitowcart BearPaw for your Robinson R44.

General

The Helitowcart BearPaw is made of machined UHMW TIVAR® polymer sheet. This material combines high-impact performance, low friction and good resistance to chemical. Its high durability will provide superior performance to your Robinson helicopter. Any question regarding the Helitowcart BearPaw system shall be directed to Helitowcart Customer Support as indicated in Table (1):

Table 1 – Helitowcart Customer Support

Care of	Mailing Address	Phone, Fax & Email:
Customer Support Helitowcart BearPaw Helitowcart (Vanair inc)	860 Marie-Victorin St-Nicholas, Lévis, Québec, Canada, G7A 3S9	Tel:1 (418) 561-4512 Fax:1 (418) 836-2291 info@helitowcart.com

Helicopter Effectivity

This installation instruction applies to the following ROBINSON Helicopters:

Table 2 – Robinson Helicopter Effectivity

A/C Model	Serial no.	Type Certificate Data Sheet
R44	0271 thru 9999	H11NM
R44 II	1140, 10001 and subsequent	H11NM

Installer Responsibilities

The installer shall ensure that the installation of the Helitowcart BearPaw does not conflict with any other part of the helicopter configuration. Technicians performing this installation should be familiar with A/C work and should have been familiarized with the different Helitowcart BearPaw system components prior to performing a first time installation. All steps in this procedure must be followed. Deviations from the procedures may result in potential structural failure or equipment malfunction and will result in a non-compliant installation.

INSTALLATION

BearPaw Installation

Reference Documentation:

- [1] Robinson R44 - Maintenance Manual & Instruction for Continued Airworthiness, RTR460.
[2] Annex A - BearPaw Assembly Drawing (VNR083)

Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 1/2" (38mm);
- Remove aft skid wearshoe & re-install the attaching screws.

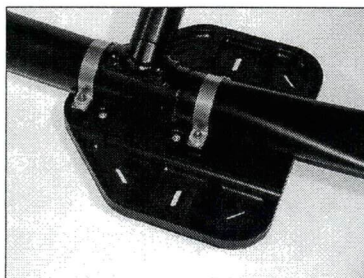
Step 2: BearPaw Preparation

- (option) Install the ice blades (Qty:2) under the BearPaw pad as per drawing (VNR083) Ref [2];
- Insert washer (Washer P/N 263-0001-17) through threaded part of the ice blade and secure with nut (P/N 262-0001-17);
 - Position the BearPaw under skid at the aft intersection with the cross tube as per figure 1 with narrow edge pointing forward.

Step 3: BearPaw Set Up

- Insert washers (P/N 263-0001-17) through all four bolts (P/N261-0001-17);
- Insert bolt (P/N261-0001-17) and washer (Washer P/N 263-0001-17) through BearPaw pad as per drawing (VNR083) Ref [2];
- Insert both U-shaped clips (P/N 314-0006-15) through bolts (P/N261-0001-17);
- Insert slotted clip supports (P/N 314-0007-15) through all four bolts. Position slotted clip supports with rounded edge toward helicopter skid;
- Insert washer (P/N 263-0001-17) & screw nuts (P/N 262-0001-17). Max. torque on nuts 60 in.-lb;
- Remove helicopter from lift;
- Amend Weight & Balance records as required using data provided in Table 3.

Figure 1 - Installed BearPaw Model BP44



BearPaw Removal

Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 1/2" (38mm);

Step 2: BearPaw Removal

- Remove nuts (P/N 262-0001-17) on U-shaped clips (P/N 314-0006-15);
- Remove U-shaped clips (P/N 314-0006-15) and remove BearPaw pad (P/N 314-0001-01);
- Inspect skid tubes to confirm serviceability *filler does P/N*
- Re-install aft wearshoe with screws as per reference [1];
- Complete installation by putting helicopter back to normal position by removing lift status;
- Amend Weight & Balance records as required.

Weight & Balance

The following information should be used to amend the helicopter weight and balance information following the installation or removal:

Table 3 - Weight & Balance Data

Item	Weight	Lateral		Longitudinal	
		Arm	Moment	Arm	Moment
Helitowcart BearPaw Model BP44	5.9 Lb 2.7 Kg	0.0in. (0.0mm)	0.0lb-kG (0.0mm-kG)	128.5 in 3.26 m	758.1 in-lb 8.8 m-kG

Parts Lists

The Helitowcart BearPaw detailed parts list is as follow:

Table 4 - Parts List

Description	Qty	Part No.	Drawing no./name
Helitowcart BearPaw Model BP44	1	112-0001-00	VNR083 / BearPaw Assembly
BearPaw pad	1	314-0001-01	VNR088 / BearPaw - Pad
U Shaped Clips	2	314-0006-15	VNR087 / BearPaw - U Shaped Clips
Slotted Clip Support	4	314-0007-15	VNR089 / BearPaw - Slotted Clip Support
Bolts	4	261-0001-17	Bolt-AN4-44
Nuts	8	262-0001-17	Nut-MS20-365-428
Washers	12	263-0001-17	Washer - AN960-416

filler does (-2) 314-0012-07



314-0011-00-A
BearPaw Model BP44
Installation Instructions - R44

INSPECTION

Life Limited Items

Three are no life limited items for the Helitowcart BearPaw.

Pre-Flight

Before each flight the following items should be inspected:

- Check that attachment bolts are installed and secured,
- Check that BearPaws are free from visible damage,
- If damage is found, verify allowable damage according to:
Table 5 – Tolerances for cracks & wear, &
Annex B – BearPaw Allowable Damage Drawing (VNR088 page 2 of 2)

Periodic Inspection Schedule

- The Helitowcart BearPaw shall be inspected every 100 flying hours.
- The Helitowcart BearPaw can be inspected concurrently with the R44 landing gear inspection.
- Recommended tolerance for performance of inspection is +/- 10% of the 100 hours period.

100 Hour or Yearly Inspection Details

- Remove Helitowcart BearPaw: See Section "BearPaw Removal",
- Inspect all parts for damage & wear. See table & figure below for allowable damage,
- Replace all damaged parts,
- Replace parts worn beyond the tolerances indicated below.
- See Tolerances for cracks & wear:
Table 5 – Tolerances for cracks & wear, &
Annex B – BearPaw Allowable Damage Drawing (VNR088 page 2 of 2)

Table 5 – Tolerances for Cracks & Wear

Zone	Nominal Dimension (Inches)	Allowable Damage/Wear (Inches)	Cracks
A	0,350	0,050	
B	1,000	0,250	
C	0,375	0,075	<u>Stiffeners</u> : NO cracks in stiffeners. <u>Pockets</u> : Cracks are acceptable in the Helitowcart BearPaw pocket areas to a maximum length of 0,5" provided they are 0,25" away from the stiffener radius change. Stop drill cracks with a 0,125" hole.
D	0,350	0,050	
E	N/A	N/A	No cracks allowed in zone E

Overhaul Requirements

- Not applicable for the designated application of this device.



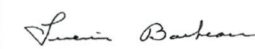

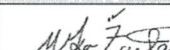
314-0011-00-A
BearPaw Model BP44
Installation Instructions - R44

REVISIONS & APPROVAL

Revisions

Date	Rev	Nature
June 1, 2006	A	Initial issue
Aug.	B	

Approval

Internal Approval :		
Vanair Inc.	 Lucien Barbeau, President	 Date: 2006-05-23
External Approval :		
Transport Canada	 Mirko Zgela, DAR#310	June 12, 2006 Date:

Annex A

See: BearPaw Assembly, drawing no. VNR088. OK.

Annex B

See: BearPaw Pad, drawing no. VNR088. Page 2 of 2.

New one

Annex A
BearPaw Assembly, Drawing no. VNR083.
P/N 112-0001-00-A

314-0011-00-A Instruct. BearPaw Installation
tel: 1-418-561-4512, fax: 1-418-836-2291, 860 Marie-Victoria, Saint-Nicolas, Lévis, Québec, Canada G7A 3S9.
www.heliotowcart.com info@heliotowcart.com

Page 7 of 10

262-0001-17-A Qty.: 8

263-0001-17-A Qty.: 12

314-0007-15-A Qty.: 4

314-0006-15-A Qty.: 2

314-0001-01-A Qty.: 1

261-0001-17-A Qty.: 4

314-0005-15-A Qty.: 2

N°	Qty	Description	Part #
1	1	Bearpaw - Pad	314-0001-01-A
2	2	Bearpaw - Iceblade assembly	314-0005-15-A
3	2	Bearpaw - U Shaped clip	314-0006-15-A
4	4	Bearpaw - Slotted clip support	314-0007-15-A
5	8	Nut MS20-365-428	262-0001-17-A
6	12	Washer AN960-416	263-0001-17-A
7	2	Bolt AN4-1/4	261-0001-17-A
8	2	Bolt	
9	2	Filler block	

NOTE : Iceblade assembly can be omitted from installation (Optional)

TOLERANCES

mm ± 0.13

mm ± 0.25

mm ± 0.51

mm ± 1.27

mm ± 2.54

mm ± 5.08

mm ± 12.7

mm ± 25.4

mm ± 50.8

mm ± 101.6

mm ± 203.2

mm ± 406.4

mm ± 812.8

mm ± 1625.6

mm ± 3251.2

mm ± 6502.4

mm ± 12703.2

mm ± 25406.4

mm ± 50812.8

mm ± 101625.6

mm ± 203251.2

mm ± 406502.4

mm ± 813004.8

mm ± 1626009.6

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mm ± 813316915.2

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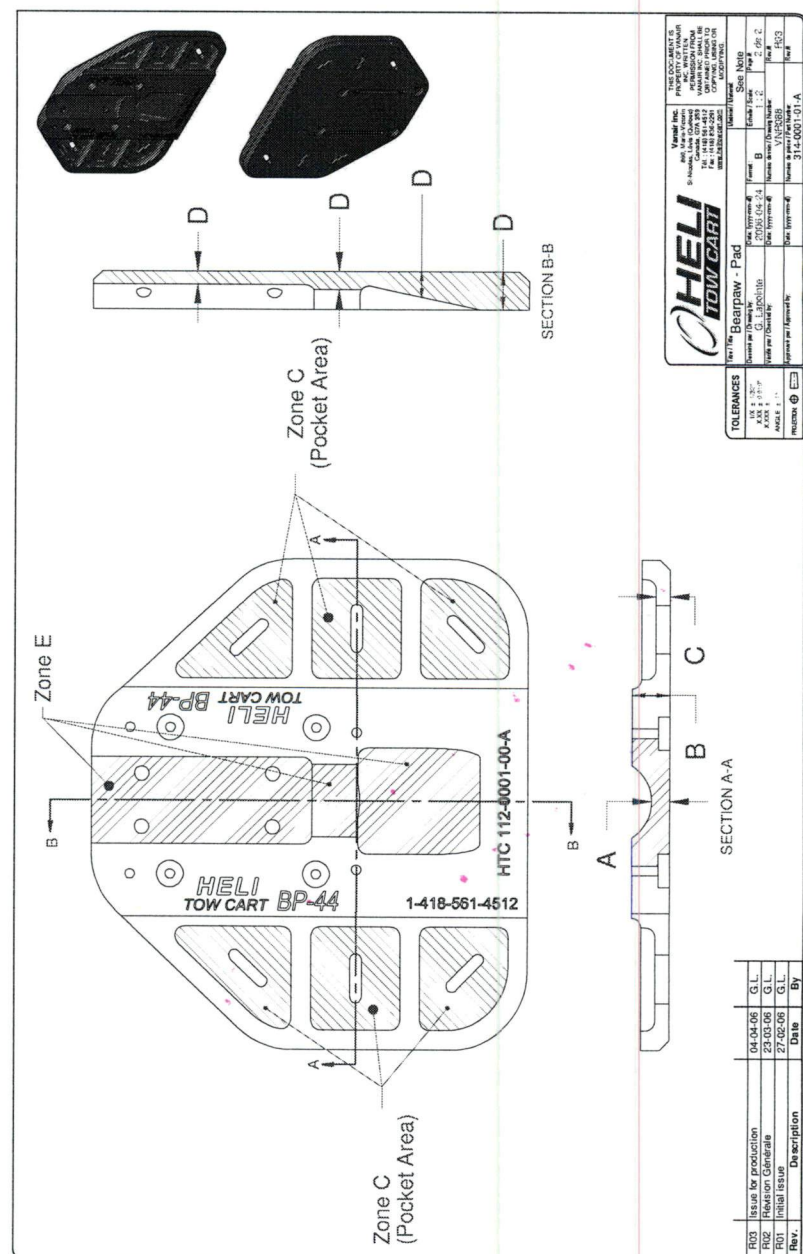
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BearPaw Pad, Drawing no. VNR088. Page 2 of 2.
P/N 314-0001-01-A

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Date: Wed, 2 Aug 2006 15:40:56 -0400
From: Lucien Barbeau <lbarbeau@sympatico.ca>
To: Helitowcart <info@helitowcart.com>
Subject: Fw: Helitowcart- Demande de modification de version de dessin

----- Original Message -----

From: Nathalie Barbeau
To: 'Guillaume Lapointe'
Cc: lbarbeau@sympatico.ca
Sent: Wednesday, July 19, 2006 2:41 PM
Subject: Helitowcart- Demande de modification de version de dessin

Bonjour Guillaume,

Transport Canada ont fait demande de modification de specs pour le support en U. Cela a déjà été approuvé par notre ingénieur aéronautique et traité. Donc on va devoir s'y adapter.

Donc, il faut:

- 1) élargir le clip de 0.750" à 0.8".
 - 2) épaissir de 0.078" à 0.1" (donc si je comprends de 14 gauge à 12 gauge ?)
- Attention: faudra garder même dimension interne du U.

Svp nous confirmer que le tout est faisable (je m'inquiète pour l'épaisseur.)

Svp appelle Lucien pour lui confirmer que tout est beau. Il va ensuite alors en relancer une nouvelle batch en production.....on a pas le choix!

Je te faxe le dessin avec modifications annotées.

Que dirais-tu de nous le fournir au plus tard pour le 2 août?

Dès qu'il sera prêt, l'envoyer par courriel à Mirko Zgela:
mirko.sgela@sympatico.ca

Si questions, contacter Lucien : 563-0217 ou Mirko Zgela au 819-383-4411.

(Je serai en vacances à l'extérieur du 21 juillet au 31 juillet.)

Merci beaucoup Guillaume,

J'espère que tu passes de belles vacances...!

Nathalie

Helitowcart (by Vanair inc.)

860 Marie-Victorin,

St-Nicolas, Levis

Quebec, Canada G7A 3S9

t: +1.418.561.4512

f: +1.418.836.2291

info@helitowcart.com

www.helitowcart.com